

# Renée Lu

Data Analyst | Quantum

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## RELEVANT EXPERIENCE

### Data Analyst

Quantium

Aug 2023 - Present

- Produced a **campaign reporting tool** for a major media client using **SQL**.
- Designed and implemented an **automated data ingestion pipeline** (Python & SQL), reducing manual data steps for monthly deliverables by **90%**, streamlining data acquisition, and ensuring data integrity.

### Graduate Data Analyst

Quantium

Aug 2022 - Aug 2023

- Delivered an **analytics tool** to generate workforce optimisation recommendations to senior stakeholders for use in a major retailer's distribution centres, with a run-rate benefit of **\$4.7 million**.
- Designed and implemented the expansion of the optimisation algorithm for a new retail division, through **data feasibility analysis (Python & SQL)**, and refactoring data engineering pipelines (Python on Google Cloud).
- **Automated testing (SQL)** and built **dashboards** (Google Cloud Platform) to monitor and provide insights into algorithm outputs.
- **Collaborated with SMEs** to build performance metrics and new data assets in the data warehouse through ETL (SQL).

### Research Assistant - Machine Learning

UNSW Faculty of Engineering

Jul 2021 - Nov 2021

- Developed novel methods for anomaly detection at 3 SATCOM network sites, analysing **petabytes** of data using **machine learning** algorithms in Matlab.
- Conducted literature reviews and **reported insights** to Defence Science and Technology Group.

### Research Scholar - Deep Learning

UNSW Faculty of Engineering

Dec 2019 - Apr 2020

- Trained **deep neural networks** for non-native children's speech recognition and placed **2nd** in INTERSPEECH 2020 Special Session.
- Performed data cleaning and **data wrangling (Python)** on **400+ hours** of children's speech data (on the largest children's speech dataset).

### Data Analyst

Red Marker

Dec 2018 - Mar 2020

- **Provided recommendations** to **C-suite executives** on the prioritisation of product features, using insights generated by data analysis (**SQL & Python**).

## ADDITIONAL EXPERIENCE

### Electrical Engineering Intern

ResMed

Dec 2020 - Jun 2021

- Liaised with suppliers for **project management** of power supplies.
- Conducted hardware testing and technical product documentation.

## EDUCATION

Bachelor of Engineering (Honours) /  
Bachelor of Commerce

University of New South Wales

2017 - 2022

**Majors:** Electrical Engineering, Economics

**Thesis:** *Improving Children's Speech Recognition by Fine-tuning Self-supervised Adult Speech Representations*

### Awards:

- High Distinction WAM: **86.2** / 100
- Vida Balshaw Women in Engineering Scholarship (2017 - 2020)
- Taste of Research Scholarship (2019)
- Women in Engineering Head-Start Award (2017)

### Extracurriculars:

- **Economics Tutor:** PASS classes for Microeconomics 1&2 (ECON1101, ECON2101) and Macroeconomics (ECON1102)
- **Executive position:** UNSW Women in Technology Society
- **Subcommittee positions:** UNSW Save the Children, UNSW Mathematics Society, UNSW Engineering Society
- **Volunteering:** UNSW Women in Engineering
- **Faculty of Engineering Ambassador**

## PUBLICATIONS

*Improving Children's Speech Recognition by Fine-tuning Self-supervised Adult Speech Representations*  
*arXiv, 2022*

- Achieved **82.8% accuracy** on children's speech recognition, and 46.08% improvement to state-of-art adult models.

*UNSW System Description for the Shared Task on Automatic Speech Recognition for Non-Native Children's Speech*  
*INTERSPEECH, 2020*

- Achieved **83.4% accuracy** on automatic speech recognition for non-native children.

## TECHNICAL SKILLS

**Coding:** SQL / BigQuery, Python, Git